

# Final Report

## Emergency Medical Services System Study Giles County, Virginia February, 2008

Prepared for:  
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## **I. Executive Summary**

The Virginia Department of Health, Office of Emergency Medical Services (hereinafter mentioned as “OEMS”) was engaged by the Virginia Department of Health, Office of Minority Health and Public Health Policy (hereinafter mentioned as “OMHPHP”) to provide a comprehensive assessment of the EMS system surrounding the Critical Access Hospital, Carilion Giles Memorial Hospital (hereinafter mentioned as “CGMH”), located in Pearisburg, Giles County, Virginia, which is one of seven hospitals in Virginia that has been designated as a CAH facility. This assessment is part of a larger study, evaluating EMS systems in the counties surrounding the Critical Access Hospitals (hereinafter mentioned as “CAH”) in the Commonwealth of Virginia. CAH Designation criteria are defined as follows:

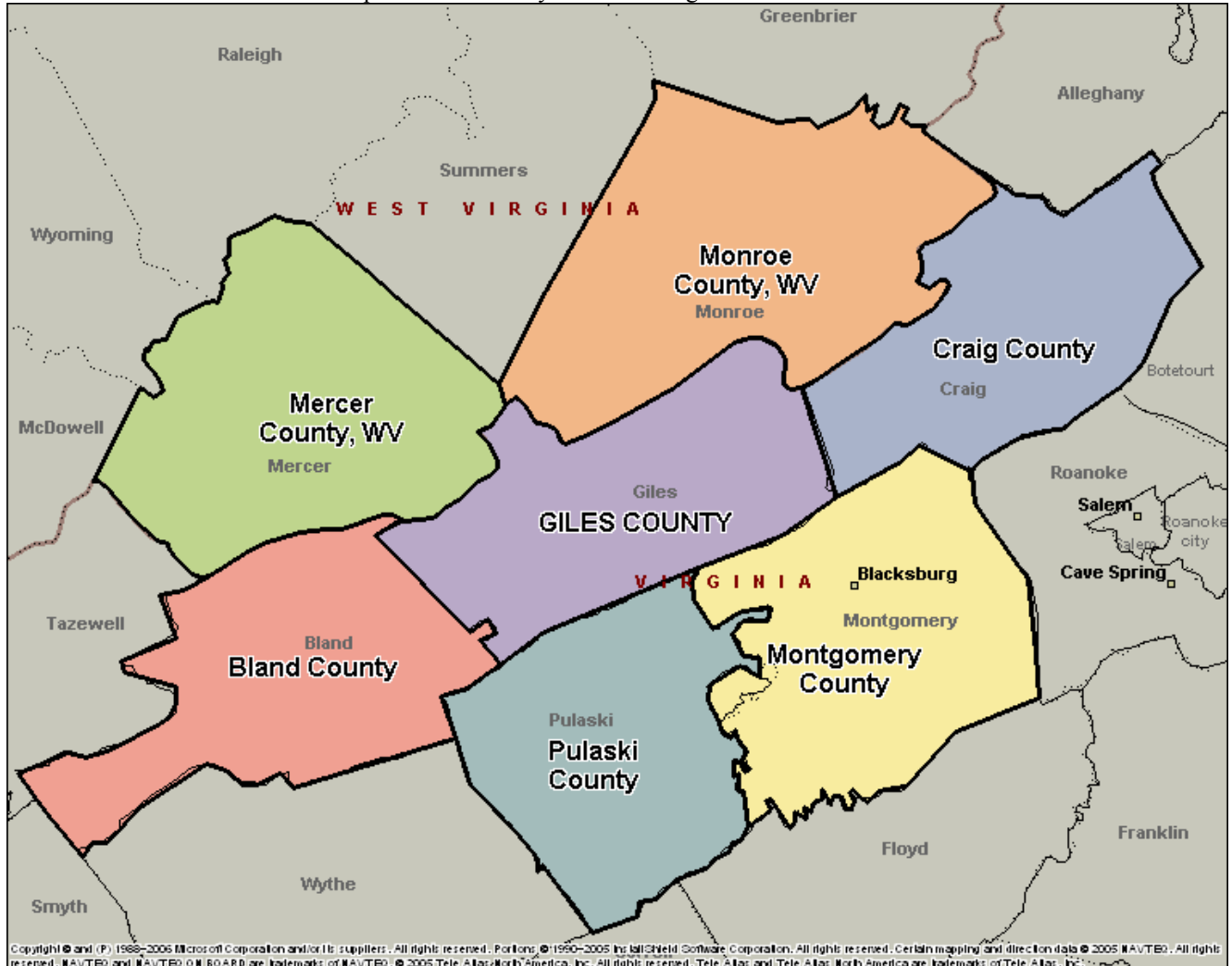
- Physical location in a state that has an established Medicare Rural Hospital Flexibility Program (Flex Program)
- Be located in a rural area
- Provide 24 hour emergency care services, using on site or on call staff
- Provide no more than 25 inpatient beds
- Have an average length of stay of 96 hours or less; and
- Be either 35 miles from another hospital or another CAH, or 15 miles in areas with mountainous terrain or only secondary roads.

During the latter half of 2007, staff from OEMS, with assistance from subcontractor agencies, performed the assessment of both the hospital itself, and the agencies that serve the county the hospital is located in. This assessment included development and distribution of surveys, interviews with system stakeholders, and review of pertinent documents.

## II. Introduction

Giles County, Virginia is a predominantly rural county located in the southwest portion of the Commonwealth of Virginia. It is bordered by Bland, Craig, Montgomery, and Pulaski Counties in Virginia, as well as Mercer and Monroe Counties in West Virginia (see Map 1).

Map 1 – Giles County and Bordering Counties



According to the 2000 Census, the population of Giles County is 16,657 people. The county size is 360 square miles, with a population density of 47 people per square mile.

The age distribution among the residents of Giles County is as follows:

- 22 % are under the age of 18.
- 6.8% are in the 18 to 24 age group.
- 28.4% are in the 25 to 44 age group.
- 26.1% are in the 45 to 64 age group.
- 16.7% are 65 or older.

The median age is 40 years old.

Additionally, the gender distribution is 100 women to 95.6 men; and 100 women to 92.2 men over 18 years of age.

Race distribution is as follows:

97.4% White

1.5% African American

Less than 1% of the following groups, respectively:

Native American, Asian, Hispanic/Latino, and “other”.

The county seat of Giles County is the city of Pearisburg, which is also the location of CGMH, Giles Lifesaving and Rescue, and the county sheriff and county administration offices.

CGMH is a not for profit hospital owned and operated by Carilion Health Systems, and has had designation as a CAH facility since 2002. During their designation process, no deficiencies were noted, no recommendations for specific needs or initiatives related to the EMS system were made during the designation process, and no changes in any policy or procedure have taken place as a result of designation. CGMH has also been accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the College of American Pathologists (CAP), having successfully completed a JCAHO inspection in 2006. CGMH has a capacity of 25 beds in the entire facility.

CGMH is the only hospital within the geographic boundaries of Giles County. While there are seven long term care facilities located within a 20 mile radius of CGMH, only one, the New River Healthcare Complex, is closer to CGMH than to another facility.

The CGMH Emergency Department (ED) is open and staffed 24 hours a day/7 days a week, and has a five bed capacity, with plans to expand in the near future. Plans are in place to build a new facility in the Pearisburg area. Giles County government is providing the site of the new facility, as well as financial and material contributions. The current hospital and grounds will be used to house the Giles County Administration Offices, once the new facility is complete.

During interviews with CGMH representatives, the lack of ED beds was mentioned as a significant issue for the facility.

There are four EMS agencies in Giles County that are licensed by OEMS. They are Carilion Patient Transport Services, Giles Lifesaving and Rescue Squad, Newport Volunteer Rescue Squad, and the Celanese Corporation EMS. All the agencies, with the exception of Carilion Patient Transport Services are volunteer staffed agencies.

### **III. Purpose and Methods of the EMS System Study**

As outlined in the scope of services within the Memorandum of Agreement between the OMHPPH and OEMS, the following areas are to be addressed in the pages to follow:

1. Examination of Network Agreements for CAH Certification
2. Study Survey
  - 2a. Questions for EMS Personnel for assessing EMS capabilities in agencies in areas served by the CAH.
  - 2b. Develop questions for CAH personnel for the purpose of assessing the overall function of the local EMS system
3. Study Components
  - 3a. Demographics of the CAH area
  - 3b. Staffing of the local EMS System
  - 3c. Placement of units on basis of call volume and population density
  - 3d. Training Initiatives
  - 3e. Communications
  - 3f. Resource Management
  - 3g. Fiscal Support
  - 3h. Medical Direction
  - 3i. Quality Assurance
  - 3j. Mass Casualty Preparedness
  - 3k. System Partnerships
  - 3l. Hospital Capabilities
4. Recommendations

To accomplish this task, the Virginia Office of EMS:

1. Partnered with the Western Virginia EMS Council (hereinafter mentioned as “WVEMS”) to assist OEMS in addressing some of the items listed in the scope of services above. A report from WVEMS was received by OEMS in August of 2007, and is “Appendix 1” of this report. Information from the WVEMS report is included in various different sections of this report.
2. Formal interviews were conducted with various stakeholders of the EMS System in Giles County, including the Giles County Administrator, the Giles County Sheriff, and the Giles County 911 Coordinator. Additionally, formal interviews were conducted with staff from CGMH, including the Chief Executive Officer, the Director of Nursing for the Emergency Department, as well as the Carilion Patient Transport Services (hereinafter mentioned as “CPTS”) Coordinator. These interviews were held to gather information regarding the relationship between the CAH and the EMS System, and vice versa, as well as to determine the capabilities of both the CAH, and the EMS System in Giles.

3. Three of the four licensed EMS agencies in Giles County: CPTS, Giles Lifesaving and Rescue, and the Newport Volunteer Rescue Squad all participated in a survey to gather some additional information about the EMS system capability, as well as the relationship with the CAH.

A copy of the survey, as well as the responses from the participants is attached to this report, as “Appendix 2”

4. Several documents were reviewed in preparation for the study report, including:
  - All documents related to the CAH designation by CGMH.
  - EMS network agreements for CGMH, as required in the original CAH certification application.
  - OEMS licensure database information to determine the number and age of EMS vehicles of each of the agencies operating within Giles County.
  - OEMS PPCR database information for all EMS calls within Giles County for calendar years 2005 and 2006.
  - OEMS Training database information for all certified EMS providers within Giles County.
  - Mutual Aid agreements existing between agencies in Giles County.
  - Return to Locality reports of expenditures submitted by Giles County Administration for Fiscal Years 2006 and 2007.
  - Rescue Squad Assistance Fund (RSAF) information for all EMS agencies within Giles County for 1997-2006 grant cycles, including items awarded and denied.

#### IV. Study Results

The results of the study of the EMS System and the Critical Access Hospital in Giles County brought forth a great deal of information. As mentioned previously in the purpose and methods of the study, several components were examined.

##### Demographics:

Demographic information for Giles County was mentioned in the Introduction section of this report, and seems to be relatively similar to other rural counties and areas within the Commonwealth of Virginia, and other counties that were examined as part of the CAH Study.

##### Staffing:

There are 72 certified EMS providers in Giles County. The distribution of providers by level is below:

Table 1 – Distribution of Certified Providers in Giles County

<b>Certification Level</b>	<b>Number of Certified Providers</b>
Emergency Medical Technician (EMT)	52 (72% of total providers in county)
EMT – Paramedic (EMT-P)	10 (14%)
EMT – Enhanced (EMT-E)	7 (10%)
EMT – Intermediate (EMT-I)	2 (3%)
EMT – Cardiac Technician (EMT-CT)	1 (1%)
<b>Total</b>	<b>72</b>

Source: Virginia OEMS Division of Educational Development Provider Database

Staffing of local EMS agencies within Giles County varies from volunteer to career agencies; and in numbers as well. As mentioned previously, four EMS agencies are currently licensed in Giles County; CPTS, Giles Lifesaving and Rescue, the Newport Volunteer Rescue Squad, and Celanese Corporation EMS. All EMS agencies are licensed at the Advanced Life Support (ALS) level, and provide ground transportation via ambulance. The Celanese Corporation, which is located within Giles County provides EMS service to its own company grounds, and only responds off site within an eight mile radius in a mutual aid situation.

Giles Lifesaving and Rescue and Newport VRS provide volunteer 911 on call coverage 24 hours a day, 7 days a week. However, neither agency has dedicated in house staffing. Giles Lifesaving and Rescue has 45 active members and inactive members with an age range of 16 years of age to 70 years of age. Newport VRS has 30 active members, with an age range of 18 to 68 years of age. The majority of providers for both agencies are Caucasian.

The only career EMS service is CPTS, which is part of CGMH. CPTS operates four (4) ambulances and provides dedicated 24 hours a day, 7 days a week service to Giles



County. However, only one ambulance is dedicated to 911 responses and is available 16 hours a day to provide daytime EMS service to the county. If a call comes in while that vehicle is out on another call, then that call is turned over to one of the other vehicles in service, if available.

CPTS has 25 employees on staff, which are Carilion employees, and range from 20 to 62 years of age. About half of those employees also volunteer with either fire or EMS agencies in Giles County when not working for CPTS. All current CPTS employees are Caucasian.

Recruitment and retention initiatives currently in place for these agencies are training either for free, or at a discount, observer programs, and other initiatives offered through the Virginia Association of Volunteer Rescue Squads (VAVRS). For CPTS employees, they are offered the same benefit packages as other Carilion Health System employees, and has little turnover.

### **Placement of Units**

One of the struggles in reviewing data related to call volume in Giles County is that CPTS is one division under a greater agency license, which incorporates EMS response territories outside of Giles County.

Average response times vary for the four agencies within Giles County, varying from 1-2 minutes for the CPTS unit that is dedicated to 911 responses, to 15 minute responses for Newport VRS. Giles Lifesaving and Rescue, which has an average response time of 6.5 minutes, has strategically placed units in substations in Pembroke and Glen Lyn to improve response times over the past 6 plus months.

### **EMS Training Initiatives**

The EMS training and continuing education (CE) opportunities for agencies and providers in Giles County are relatively plentiful. EMS providers in the county are fortunate in the fact that courses are available in county, and do not require travel outside of the county, which providers in similarly rural counties often have to do in order to receive the training that they need.

Much of the ALS CE hours are provided by WVEMS, as well as EMT-Enhanced courses. An EMT-Enhanced course was offered earlier in 2007, and three providers from Giles County enrolled and became certified as EMT-E's. WVEMS offers a minimum of 48 ALS CE hours to providers in Giles County per year, and also offers International Trauma Life Support (ITLS), Pediatric Education for Prehospital Professionals (PEPP), and will be offering Advanced Medical Life Support (AMLS) courses in 2008. Three Giles County EMS providers completed PEPP courses and four others completed ITLS courses over the past three years. Additionally, an EMT-Basic course is offered in Giles County once per year.

CGMH is quite active in the training and education of the EMS providers in Giles County. CGMH offers certification in ACLS, PALS and Neonatal Resuscitation Program

(NRP). CGMH also supervises students enrolled in initial EMT certification courses. CPTS employees are required to attend training sessions held by the Carilion Training Division.

Additionally, both the Giles Lifesaving and Rescue and Newport VRS are designated site locations for Emergency Medical Services Satellite Training (EMSAT), which is a monthly, one-hour interactive training and information program for Virginia EMS and Fire personnel. EMSAT broadcasts and DVDs offer required EMS topics at the ALS and BLS levels, and enrichment classes that may not be widely available throughout the state. Certified Virginia EMS providers may receive continuing education credit by viewing an EMSAT broadcast at a designated state site. Providers may also receive category III continuing education credit for viewing EMSAT DVDs.

## **Communications**

Giles County has had Enhanced – 911 (E-911) since 1992. EMS dispatch is connected to the Giles County Sheriff's office, and uses radio paging to contact EMS agencies. All three EMS agencies in Giles County utilize radio and/or cellular phone communication to communicate with the CAH. These agencies provide patient report information prior to their arrival to the hospital 75 to 100% of the time. Additionally, Newport VRS has two cardiac monitors with the ability to transmit information to the CAH ED.

Certain areas of Giles County have “dead areas” where radio and cell phone communication are not possible, however, Department of Homeland Security grant funds are being utilized to upgrade the county communications system to high frequency VHF, which can operate on frequencies used in adjoining counties. Additionally, the number of cellular phone towers in Giles County is increasing. Upgrades in cell phone coverage were provided to CPTS and the CAH by the Near Southwest Preparedness Alliance (hereinafter mentioned as “NSPA”), and cell towers in Monroe County, WV are used to help increase coverage in the area.

## **Resource Management**

There are 13 permitted EMS vehicles among the 4 agencies in Giles County. This includes 12 Ambulances and two ALS first response vehicles (A Ford Explorer and a Buick Sedan owned and operated by Giles Lifesaving and Rescue).

As of the last inspections of each agency in Giles County by OEMS field representatives in April and May of 2006, all vehicles were in good working condition, without any mechanical failures noted in inspection reports. The vehicles range in age from 4 to 19 years of age at the time of inspection. According to inspection reports, each vehicle is equipped at the ALS level.

In terms of aeromedical service, Giles County is primarily served by Carilion Lifeguard 10, which is connected to Carilion Roanoke Memorial Hospital. Based on review of PPCR data from 2005 and 2006, Lifeguard responded to calls in Giles County 12 times, and 46 times, respectively, with no explanation available for the increase in volume.

## **Fiscal Support**

For Fiscal Year 2006 and 2007, Giles County received \$13,282.47 in “Return to Locality” (RTL) funding from the Virginia Department of Health from the “Four for Life” revenues from passenger vehicle registration. The *Code of Virginia* states that the Department of Health shall return twenty-six percent (26%) of the registration fees collected to the locality wherein such vehicle is registered to provide funding for EMS Training of volunteer or salaried emergency medical service personnel of licensed, nonprofit emergency medical service agencies; or for the purchase of necessary equipment and supplies for licensed, nonprofit emergency medical service agencies. Giles County uses these funds to assist in matching funds for equipment purchases by the EMS agencies within Giles County.

In reviewing funding reports from Giles County submitted to OEMS for RTL funds distributed in Fiscal Year 2006 and 2007, both Giles Lifesaving and Rescue, and Newport Rescue Squad each received \$6,641.24 per year for both years.

These funds were reported as used for training and equipment, but reports are not required by OEMS to specify what training and equipment needs these funds are used to satisfy.

In addition, Giles County assists in subsidizing the business operation expenses for the CPTS 911 response in Giles County.

Of the three main EMS agencies in Giles, only CPTS and Giles Lifesaving and Rescue have fee for service programs in place. The CPTS collection rate for interfacility transfers is 38%, and the Giles Lifesaving and Rescue collection rate has ranged between 26 and 50% over the past year. Giles Lifesaving and Rescue bills the patient’s insurance company, but will seldom bill the patient for the fee for service.

## **Rescue Squad Assistance Fund – Recent History**

Dating back to 1997, Giles County agencies have actively participated in RSAF grant processes. In that time, the Giles Lifesaving and Rescue Squad, as well as the Newport Volunteer Rescue Squad have been awarded funds for equipment purchases at a total of \$221,514. Neither the Celanese Corporation Emergency Brigade, nor CPTS are eligible for RSAF awards, as they are not non-profit entities.

Items of note include the fact that Newport Volunteer Rescue Squad has not applied for any RSAF funding since June of 2005. Giles Lifesaving and Rescue Squad did not apply for RSAF funding between 1997 and 2004.

The table below outlines RSAF grant awards for agencies in Giles County. This includes the cycle that the grant was awarded, the item that was requested, the amount of the award, and the percentage of matching funds by the agency for each awarded item.

Table 2 - RSAF Awards for Giles County – December 1997 to June 2007

<b>Giles Lifesaving and Rescue Squad</b>			
Grant Cycle	Item	Amount	Percent of Fund Match By Agency
12/1997	1 Ambulance	\$48,000.00	20%
06/2004	1 Ambulance	\$32,936.50	50%
06/2006	1 TV/VCR/DVD Combo player	\$250.00	50%
06/2006	1 Laptop Computer	\$500.00	50%
06/2006	1 CPR Manikin	\$2,250.00	50%
06/2006	1 Infant Intubation Trainer	\$200.00	50%
06/2006	1 Pediatric Intubation Trainer	\$200.00	50%
06/2006	1 Light Duty Rescue Vehicle	\$42,500.00	50%
06/2007	Extrication Tools	\$21,347.00	50%
<b>Total Award Amounts</b>		<b>\$148,183.50</b>	

<b>Newport Volunteer Rescue Squad</b>			
Grant Cycle	Item	Amount	Percent of Fund Match By Agency
12/1997	10 Monitoring Pagers	\$750.00	20%
06/2001	Ambulance stretcher	\$1,300.00	50%
06/2001	4 mobile radios	\$1,257.60	20%
06/2001	10 portable radios	\$3,576.00	20%
06/2002	1 Ambulance	\$51,885.20	20%
06/2004	10 Monitoring Pagers	\$2,400.00	20%
12/2004	1 Defibrillator	\$11,342.00	20%
06/2005	1 Desktop Computer	\$880.00	20%
<b>Total Award Amounts</b>		<b>\$73,360.80</b>	

Source: Virginia OEMS RSAF Grant Awards Database

## Medical Direction

There are three Operational Medical Directors (OMD) affiliated with the agencies in Giles County, Drs. Douglas Scott Hayes, Carol Gilbert, and Julia Weiseman. Dr. Hayes is the OMD for Giles Lifesaving and Rescue and Celanese Corporation EMS, Dr. Gilbert is the OMD for CPTS, and Dr. Weiseman is the OMD for the Newport VRS. Both Dr. Hayes and Dr. Gilbert are also affiliated with Carilion Health Systems. All three have been intimately involved in the development, regular review, and revision of all treatment and transport protocols utilized by EMS agencies and providers in Giles County, as well as active participation in the Performance Improvement (PI) and Trauma Performance Improvement (TPI) programs at the agencies that they are affiliated with.

Dr. Hayes is an ED physician at CGMH, and is an active member of Giles Lifesaving and Rescue, often responding to EMS calls in Giles County himself. He personally supervises EMS providers in the field as well as rendering care, and provides medical direction from the ED as well.

Dr. Weiseman is an ED physician at HCA Montgomery Regional Hospital in Christiansburg, VA, and actively participates in training and Performance Improvement programs at Newport VRS.

Dr. Gilbert is well known and well respected in the EMS community, not only in Giles County, but across the Commonwealth from her many years of service as the State Medical Director, having stepped down from that position in January 2007. She has been an active participant in building the EMS system in Virginia. As a physician with Carilion, she has been involved in the establishment and maintenance of the CPTS PI program for the entire CPTS division.

In addition to the OMD support, Giles County EMS providers utilize the protocols established by the WVEMS Medical Direction Committee for off-line medical direction, and are able to receive on-line medical direction from the CGMH ED at any time.

### **Quality Assurance**

In calendar years 2005 and 2006, a total of 1,204 and 2,066 PPCR reports were submitted to OEMS by agencies in Giles County. This number is based on EMS responses based in Giles County only. As the CPTS division that is based out of GCMH is part of one large agency with many different sub-stations, it is difficult to ascertain exactly how many responses the CGMH division of CPTS responded to, other than to determine the number of EMS calls that originated within Giles County. OEMS believes that this was the best way of gathering call volume data. Out of the total number of EMS call for 2005, 26% of those calls were ALS, and 29% of the calls in 2006 were ALS.

In terms of Trauma versus Medical, all EMS responses with an incident disposition of either “transported” or “treated/transferred care” were considered in the evaluation. Additionally, “trauma” was determined to be any PPCR report with a clinical assessment equal to “traumatic injury”, and call type not equal to “medical emergency”. For “medical”, PPCR reports had a clinical assessment not including “traumatic injury”, and a call type of “medical emergency”. Based on those criteria, 6% of the calls in Giles County in 2005, and 11% of the calls in 2006 were classified as “Trauma”.

Based on PPCR data, CGMH received 83% and 82% of patients transported by Giles County agencies in 2005 and 2006, respectively. Of note is the fact that Newport VRS only transports between 15-19% of its patients to CGMH, with the majority of their patients going to HCA Montgomery Regional Hospital. This figure seems relatively consistent compared to other agencies in counties served by CAH hospitals whose primary response areas are on the edge of that county, and are closer to other hospitals.

In terms of response data, agencies in Giles County have varied response times, and transport times from scenes to hospitals. Based on data from 2005, agencies average 9.6 minutes from the time the call is received to the time a unit is enroute. The time from unit enroute to arrival at scene averages 7 minutes and time from the scene to the hospital averages to be about 20 minutes.

For transfers from CGMH to other hospitals, a variety of factors come into play each of which affect the amount of time it takes to transfer a patient to another facility. Transfers are typically dependent on patient diagnosis, available beds at receiving hospitals, and patient preference. 139 patients were transferred from CGMH to other facilities in reviewing data submitted by CGMH for the time period from January 1 to June 30, 2007. 78% of all transfers were for services that were not available at CGMH, the highest percentage of those being cardiology services (32%) and Orthopedics (13%). The majority (58%) of transfers went to Carilion Roanoke Memorial Hospital (hereinafter mentioned as “CRMH”), in Roanoke, VA. CRMH is 65 miles from CGMH, and is typically about a 1 hour and 15 minute drive. Additionally, 25% of patients transferred went to Carilion New River Valley Medical Center (hereinafter mentioned as “CNRVMC”), located in Radford, VA. CNRVMC is 33 miles from CGMH and about 40 minutes drive time. Another 15% of transferred patients went to HCA Montgomery Regional Hospital in Christiansburg, which is 27 miles from CGMH and about 35 minutes drive time. The overwhelming majority of patient transfers out of CGMH are done by CPTS. On rare occasions, Giles Lifesaving and Rescue or Newport VRS have done transfers, but are not compensated for doing so.

As was stated previously, all agencies in Giles County have established PI programs. These programs involve regular reviews of PPCR reports completed by the respective agency, and include OMD participation. Additionally, in reviewing PPCR submission compliance information for 12 quarters for calendar years 2004-2006, all agencies were compliant with their submissions for all but one quarter, with one agency missing a submission in 2004.

### **Mass Casualty Preparedness**

Due to the geographic location of Giles County, both county government, and CGMH participate in activities of the NSPA, which was organized to facilitate a coordinated regional healthcare response in the event of mass casualty events. Additionally, all are participants in many of the emergency and disaster preparedness training programs that are offered by NSPA.

In the event of a large scale emergency, CGMH has the surge capacity for up to 20 additional beds, in addition to the five ED, and 25 regular beds currently in place at the hospital. Future expansion plans for the ED at CGMH include a capacity of eight beds, and three specialty evaluation rooms.

### **System Partnerships**

All of the EMS Agencies within Giles County have mutual aid agreements in place, both with each other, and with agencies in counties that adjoin Giles, including those counties that are in the state of West Virginia. There is also an agreement with Celanese Corporation EMS, for any incident within an eight mile radius of the Celanese plant. There is also a strong working relationship that exists between the county EMS agencies, and the county administration, the county sheriff’s office, and police departments that serve the localities of Pearisburg, Glen Lyn, Narrows, Pembroke, and Rich Creek.

Based on interviews conducted and review of survey information, it does seem to be that EMS has a pretty clear understanding of their role as it pertains to the CAH. The mere fact that the CAH facility has its own EMS service lends to that understanding.

### Hospital Capabilities

CGMH has one physician on staff in the ED 24 hours a day, 7 days a week. An additional physician staffs the ED from 2pm to 10pm on Saturday, Sunday, and Monday each week. Two nurses are on staff 24 hours a day, with a third nurse on staff from 11am to 11pm daily. CGMH does not employ EMS providers to staff the ED; however there are occasions where employees from CPTS may assist in the ED if needed, especially during overnight hours.

CGMH has had a volume of patients in the ED ranging between roughly 9,400 and 11,900 patients. As of July 2007, they had already seen over 9,300 patients. CGMH averages about 1,000 per month. The majority of patients CGMH receives range from 60 to 80 years of age. Nearly 40% of the patients that CGMH receives are actually from Monroe County, West Virginia, which is in the CGMH catchment area.

CGMH does not track information about the number of hospital users that “walk in” to the ED versus arrival via EMS transport or specific agency, nor do they track those patients that arrive via EMS for specific information, such as arrival by ALS versus BLS, or their disposition.

As mentioned previously in this report, CGMH totaled 139 transfers from their facility from January to July of 2007, roughly 23 per day. The majority of patients are transported because they are in need of services that are not offered at CGMH. The table below outlines the types of transfers based on the service needed by the patient being transferred, and the percentages of transports it represents.

Table 3 – Types of Transfers out of Carilion Giles Memorial Hospital – January – July 2007

Type of Transfer	Percentage of Transports (Based on total of 139)
Cardiology	31.6%
Orthopedics	13.2%
Psychiatry	10.9%
No ICU bed available at CGMH	9.8%
Doctor Request	8%
Trauma	5.2%
Renal	5.2%
Family Request	2.3%
Other (includes OB/Gyn)	33.9%

Source: WVEMS Report on Virginia CAH Project

As was also mentioned previously, 58% of all patients transferred out of CGMH went to Carilion Roanoke Memorial Hospital. In addition, another 25% went to Carilion New River Valley Medical Center in Radford, and HCA Montgomery Regional Hospital in Christiansburg. CGMH does not track information related to the equipment that is used on transports out of CGMH, or the number and percentage of transports that have CGMH

personnel (nurses and/or respiratory therapists) that may accompany EMS crews on transports to partner facilities.

Network agreements exist, and are honored with partner facilities in the Carilion Health System. Transfer agreements exist with other hospitals in the area, which have been listed previously.



## **V. Key Findings and Recommendations**

For each area evaluated in the information in Section IV of this report, key findings, as well as some recommendations for future feasibilities will be made.

### **Staffing/Placement of EMS Units:**

#### **Key Findings:**

In Giles County, there are 72 certified EMTs for the population size of 16,167 people, or 1 EMT for every 224 people in the county. This is comparable to the total number of EMTs versus people in the Commonwealth of 1 to 204.

The number of volunteer versus career providers also seems to be comparable to most rural counties in Virginia, with a majority of providers being affiliated with volunteer agencies. None of the agencies that participated in interviews mentioned the recruitment or retention of EMS providers as issues that their respective agencies are currently facing. The age, gender, and race of EMS providers in Giles seem to be relatively consistent with the demographic information of the county as a whole.

In terms of hours of EMS coverage in the county, as response times, the mere fact that CPTS provides dedicated 24/7 staffing certainly aids in keeping response times down. Of note is the strategic placement of units in Pembroke and Glen Lyn by Giles Lifesaving and Rescue, in order to reduce their response times, which was reported to have improved the agency response times. However, one of the struggles of the evaluation was determining how many emergencies CPTS responded to in the other agencies primary response territories, as well as how many emergencies they responded to while another vehicle was already on another emergency. Based on the fact that the Giles division of CPTS is only one division of a larger agency made up of divisions in several territories, it is impossible to differentiate between them.

Recruitment and retention initiatives are varied, from the free/discounted training opportunities to the benefit packages that CPTS personnel receive as employees of Carilion Health System. Again, it is worth mentioning that CPTS reported to having little turnover, and none of the other agencies mentioning any issues related to recruitment and/or retention.

#### **Recommendations:**

OEMS recommends that volunteer agencies in Giles County utilize the “Keeping the Best” series of recruitment and retention workbooks offered to all EMS agencies by OEMS, in order to maintain, and increase their agency rosters. While they may not be facing urgent staffing issues, it is also appropriate to continue to strive to maintain and increase current provider numbers. Agencies should continue to provide training at free or discounted prices.

**EMS Training Initiatives****Key findings:**

It seems that educational opportunities for providers in Giles are relatively robust, with educational opportunities for individuals who wish to become certified as EMTs and advanced level EMTs, as well as continuing education hours, and specialty courses, such as ITLS and PEPP.

WVEMS is doing an acceptable job of making those courses available to those providers within that planning district. It is also worth noting that the CAH itself offers several training programs and clinical opportunities to EMS providers, and especially those not affiliated with CPTS.

The one item of note is the low numbers of providers who are enrolling, and completing these courses, but at the same time, the numbers of advanced level providers in the county are relatively low as well.

**Recommendations:**

EMS System stakeholders, including CGMH, WVEMS, and the individual agencies themselves, should continue to work collaboratively to ensure that opportunities for providers to obtain or maintain EMS certification remain available.

**Communications****Key Findings:**

Like many other rural areas, Giles struggles with the ability to have reliable radio and cellular coverage over 100% of the county.

It is commendable that upgrades in radio and cellular phone communications have been, and are planning to be done throughout the county, and that a collaborative approach has been taken to make funds and equipment available to provide communication upgrades, through NSPA and the Department of Homeland Security.

It is also worth making note of the fact that high numbers of agencies provide patient report information to the CAH, and are even able to send cardiac monitoring information to the CAH prior to arrival.

**Recommendations:**

Giles County governmental administration should continue to work collaboratively with internal and external entities and resources to upgrade communications abilities in Giles County. Additionally, CGMH should work collaboratively with transport agencies to promote the use of transmission of 12 Lead EKG information from the field.

**Fiscal Support****Key findings:**

During the evaluation process, none of the agencies that participated stated that finances were an issue, though both agencies that bill for service stated that they have collections rates of less than 50%.

Additionally, it is a significant concern that the Newport VRS has not applied for any type of RSAF grant funding since 2005, and that Giles Lifesaving and Rescue had not applied between 1997 and 2004. However, 4 EMS vehicles, and various equipment, including training equipment, have been purchased through RSAF funds.

**Recommendations:**

Eligible agencies in Giles County should be applying for RSAF grant funding on a consistent basis, in order to obtain updated vehicles and equipment.

Additionally, agencies that are billing for service should strive to improve their collection rates for additional revenue. OEMS does have guidance documents to assist those agencies who bill for service, or wish to bill for service, which may be helpful to these agencies.

**Medical Direction****Key findings:**

The agencies of Giles are fortunate to have active involvement by their respective OMDs. The fact that two of the three OMDs who are affiliated with agencies in Giles are also affiliated with the Carilion Health System lends to maintain strong positive working relationships between the CAH and the EMS system in the county.

All three have had a major effect on system and protocol development, and in provision of online and offline medical direction.

Finally, the OMD's all seem to actively participate in performance improvement processes in place by their respective agencies.

**Recommendation:**

The OMDs in Giles continue to maintain the relationships with the EMS agencies that have existed, as well as provide mentoring opportunities as other doctors have interest in the OMD process.

**Quality Assurance****Key Findings:**

As has been stated previously, the fact that CPTS-Giles is part of one larger agency license made it difficult for reviewers to cull specific data regarding emergencies that CPTS-Giles responded to. That affects all the factors to be taken into consideration under the Quality Assurance evaluation. Aside from that, it seems as though the majority of EMS responses in Giles are medical in nature. Also, it is worth noting that one of the agencies in Giles County (Newport VRS) transports the majority of its patients out of county, due to geography.

Additionally, all agencies have some type of call review/PI program in place, which is essential for productive quality assurance programs. Finally, review of data did bring to light some data submission issues, but it does appear that those issues have been rectified.

In terms of CAH interfacility transports, CGMH seems to be relatively comparable to other CAH facilities and rural hospitals in terms of the number of transfers, and the reasons for those transports. It is obvious and acceptable that CGMH not have the means to provide specialty service for every type of medical condition, otherwise they would have not received CAH designation, but it is a good indication of strong collaboration that the CAH has agreements in place for transports of patients to other facilities. Study reviewers understand the issues that may arise in those processes, which may delay transport.

**Recommendations:**

It is recommended that EMS agencies continue to strive to improve response times. The efforts by Giles Lifesaving and Rescue to strategically place units in substations certainly assist in the improvement. In terms of transports from the CAH to other facilities, it is recommended that CGMH continues to work collaboratively with its partner facilities to maintain network agreements, and provide an effective interfacility transport system.

**Mass Casualty Preparedness/System Partnerships****Key Findings:**

The NSPA is providing the organizational structure and planning to address mass casualty/surge capacity events. CGMH has preparedness policies in place to address such events. Also, several training opportunities are offered to CAH and EMS staff for Mass Casualty events.

It seems that network agreements between the CAH and partner facilities, as well as mutual aid agreements between EMS agencies in Giles County, and areas outside of Giles, are in place, and being honored.

**Recommendation:**

NSPA should continue to set the pace in terms of Mass Casualty Preparedness, which participation and cooperation from the CAH. Additionally, EMS agencies in Giles should review, revise, and update mutual aid agreements on an annual basis.

**Hospital Capabilities****Key Findings**

One of the items that stood out in evaluating the capabilities of the CAH is the information that the CAH does not track. It would be very helpful, for this evaluation, or for future similar evaluations, that CGMH create a database to determine walk in versus transport by EMS agency, as well as categorize by specific EMS agency, chief complaint, and differential diagnosis. It seems that staffing levels are appropriate for patient volume. Additionally, as has been stated previously, transport numbers and patterns seem consistent with other CAH facilities.

**Recommendations:**

CGMH should strive to collect additional patient data information, if for no other reason than to enhance quality of care. The ED sees roughly 32 patients a day, and that data should be able to be entered into a database on a daily basis. This will lend to better patient information between the CAH and EMS agencies.

**Conclusion:**

The Virginia OEMS believes that between continuing efforts to improve the EMS System in Giles, coupled with the recommendations that have been made in this report, that the EMS system in Giles County will be better than ever as it moves into the future. The Virginia OEMS remains committed to provide whatever materials are necessary to meet that goal.

**Study Participants:**

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**Appendices:**

Appendix 1 - Western Virginia EMS Council Report to OEMS

Appendix 2 – Responses to survey questions by study participants.